

INTERNATIONAL INDIAN SCHOOL, DAMMAM
MATHS WORKSHEET 2018 – 19
CLASS VIII - SQUARES AND SQUARE ROOTS

1. The possible unit digit of the square root of 9988001.
2. The number of digits in the square root of a number having 7 digits is _____
3. The number of zeros at the end of the square of 253000 is _____
4. If the area of the square plot is 225 m^2 , then its side is _____
5. Find the smallest square number which is divisible by each of the numbers 4, 5 and 10
6. Find the square root of the following numbers by division method.
a) 1681 b) 4225 c) 2916 d) 5184
7. Find the square root of the following by prime factorisation.
a) 6561 b) 8649 c) 7396 d) 6889
8. Find the square of the following without actual multiplication.
a) 23 b) 45 c) 14 d) 32
9. In $\triangle ABC$, $\angle B = 90^\circ$, if $AB = 6 \text{ cm}$ and $BC = 8 \text{ cm}$. Find AC .
10. Find the square root of the following decimal numbers.
a) 7.29 b) 12.25 c) 92.16 d) 53.29
11. Find the greatest number of 5 digits which is a perfect square.
12. Find the smallest number by which the following numbers must be multiplied to obtain a perfect square. Also find the square root of the number so obtained.
a) 648 b) 1458 c) 2475
13. Find the smallest number by which the following numbers must be divided to obtain a perfect square.
a) 3267 b) 9408 c) 6655

14. Find the least number which must be subtracted from each of the following numbers so as to get a perfect square. Also find the square root of the perfect square obtained
- a) 8286 b) 5628 c) 1300
15. Find the least number which must be added to each of the following numbers so as to get a perfect square. Also find the square root of the perfect square obtained
- a) 6560 b) 8644 c) 12994
16. 5000 chairs are to be arranged in rows and columns, such that the number of rows is equal to the columns. Will all the chairs be accommodated in this arrangement? If not how many will be left out?
17. 4096 soldiers are arranged in a parade in such a manner that there are as many soldiers in a row as there are rows in the parade. How many rows are there in the parade?



* The sum of the first n odd numbers is equal to n^2 .

* The difference of the squares of two consecutive integers is equal to the sum of the two numbers.

INTERNATIONAL INDIAN SCHOOL, DAMMAM
MATHS WORKSHEET 2018 – 19
CLASS VIII - CUBES AND CUBE ROOTS

1. Number of digits in the cube root of 140608 is _____
2. The value of $\sqrt[3]{27} + \sqrt[3]{125}$ is _____
3. Cube of 0.05 is _____
4. Cube of 0.2 is _____
5. Which of the following are perfect cubes
a. 900 b. 125000 c. 640000 d. 1331000
6. The side of a cube is 17cm. find its volume.
7. Volume of a cube is 2744 m^3 . Find the side of the cube.
8. Find the digit in the ones place of the cubes of the following
a) 81 b)94 c)62 d) 455 e) 5623
9. Find the cube root by prime factorisation method.
a) 4096 b) 5832 c) 35937 d) 42875
10. Find the smallest number by which each of the following numbers must be multiplied to obtain a perfect cube. Also find the cube root of the number so obtained.
a) 2560 b) 1323 c) 648 d) 392
11. Find the smallest number by which each of the following numbers must be divided to obtain a perfect cube.
a) 1188 b) 1600 c) 3087 d) 8640
12. Find the cube root by estimation method.
a) 54872 b) 68921 c) 175616 d) 39304
13. Find the cubes of the following numbers.
a) 19 b) 28 c) 25 d) 50
14. How many cuboids of dimensions 4cm, 6cm, 15cm are needed to make a cube?
15. Karan has cuboidal blocks sides 5cm, 2cm and 10cm respectively. How many such cuboids will he need to make a perfect cube?

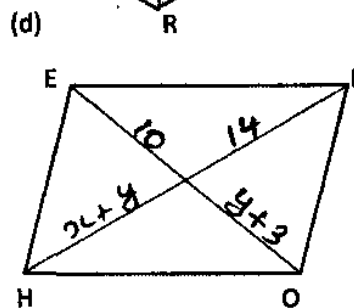
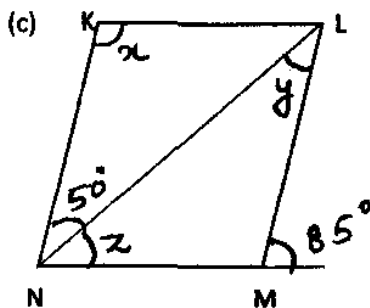
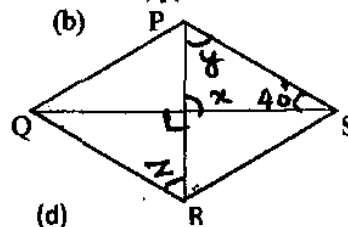
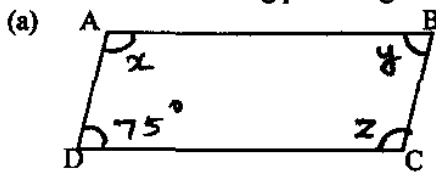
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MATHEMATICS WORKSHEET 2018 – 19

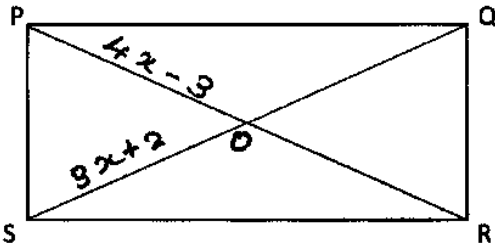
CLASS VIII

UNDERSTANDING QUADRILATERALS

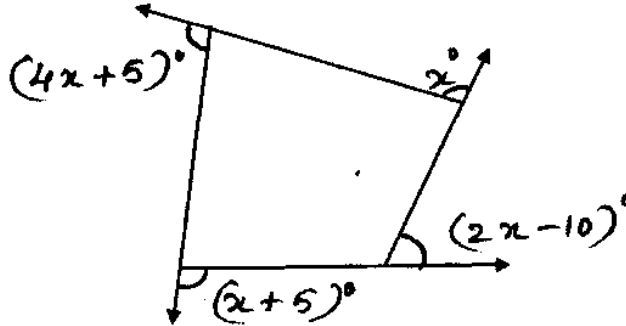
- How many diagonals does each of the following have?
[use the formula - number of diagonals = $\frac{n(n-3)}{2}$]
(a) a pentagon, (b) a regular hexagon, (c) an octagon.
- Find the angle sum of the convex polygons with number of sides,
(a) 6, (b) 9, (c) 11.
- Find the number of sides of a regular polygon whose each exterior angle has a measure of 30° .
- Find the number of sides of a regular polygon whose each interior angle has a measure of 144° .
- Find the measure of each exterior angle of a regular polygon of 10 sides.
- Find the measure of each interior angle of a regular polygon of 24 sides.
- The angles of a quadrilateral are in the ratio 1:2:3:4. Find the measure of each angle.
- Two adjacent angles of a parallelogram are in the ratio 11:7. Find the measure of each of its angles.
- Find the length of the diagonals of a rectangle whose side are 8 cm and 15 cm.
- One of the diagonals of a rhombus is equal to one of its sides. Find the angles of the rhombus.
- In a parallelogram ABCD, $\angle A = (3x - 10)^\circ$ and $\angle B = (5x + 30)^\circ$. Find all angles of the parallelogram.
- The sum of the opposite angles of a parallelogram is 140° . Find the measures of the angles of the parallelogram.
- Find the number of sides of a regular polygon, the sum of whose interior angle is 1620° .
- In a parallelogram PQRS, $\angle P$ is 40° more than $\angle Q$. Find all the angle of the parallelogram.
- In each of the following parallelograms find the measure of x, y, z .



16. In the given figure, PQRS is a rectangle. Its diagonals meet at O. Find x, if $OS = 3x + 2$ and $OP = 4x - 3$



17. Find the value of x from the figure.



18. If the sides of a polygon are produced in an order, the sum of the exterior angles so formed is equal to -----
19. A quadrilateral having only one pair of opposite sides parallel is called a -----
20. If the diagonals of a quadrilateral are equal and bisect each other, the quadrilateral is a -----

INTERNATIONAL INDIAN SCHOOL, DAMMAM

MATHEMATICS WORKSHEET 2018 – 19

CLASS VIII PRACTICAL GEOMETRY

1. Construct a quadrilateral ABCD in which $AB = 4.4$ cm, $BC = 4$ cm, $CD = 6.4$ cm, $DA = 2.8$ cm and $BD = 6.6$ cm.
2. Construct a parallelogram PQRS where $PQ = 3.6$ cm, $QR = 4.2$ cm and $PR = 6.5$ cm.
3. Construct a rhombus with side 6 cm and one diagonal 8 cm. Measure the other diagonal.
4. Construct a kite ABCD in which $AB = 4$ cm, $BC = 4.9$ cm, $AC = 7.2$ cm.
5. Construct a quadrilateral ABCD in which $AB = 5.5$ cm, $AD = 4.4$ cm, $CD = 6.5$ cm, $AC = 6.5$ cm and $BD = 7.1$ cm.
6. Construct a quadrilateral ABCD in which $AB = 3.8$ cm, $BC = 3$ cm, $AC = 4.5$ cm, $DA = 2.3$ cm and $BD = 3.8$ cm.
7. Construct a rhombus PQRS in which $PR = 7$ cm and $QS = 6$ cm.
8. Construct a quadrilateral ABCD in which $BC = 7.5$ cm, $AC = AD = 6$ cm, $CD = 5$ cm and $BD = 10$ cm.
9. Construct a rhombus PQRS in which $PR = 5.8$ cm and $QS = 6.5$ cm,
10. Construct a quadrilateral ABCD in which $AB = 5.1$ cm, $BC = 2.5$ cm, $DA = 4$ cm, $\angle A = 60^\circ$ and $\angle B = 85^\circ$.
11. Construct a quadrilateral PQRS in which $PQ = 9$ cm, $QR = 5$ cm, $RS = 7$ cm, $\angle Q = 45^\circ$ and $\angle R = 90^\circ$.
12. Construct a quadrilateral ABCD in which $AB = 4.4$ cm, $BC = 4.7$ cm, $DA = 3.5$ cm, $\angle A = 125^\circ$ and $\angle B = 120^\circ$.
13. Construct a quadrilateral ABCD in which $AB = 4$ cm, $BC = 7$ cm, $\angle A = 75^\circ$, $\angle B = 110^\circ$ and $\angle C = 120^\circ$.
14. Construct a quadrilateral MATH in which $MA = 5.3$ cm, $MH = 2.9$ cm, $\angle M = 70^\circ$ and $\angle A = 95^\circ$ and $\angle T = 85^\circ$.
15. Construct a quadrilateral ABCD in which $AB = 5.5$ cm, $BC = 3.7$ cm, $\angle A = 60^\circ$, $\angle B = 105^\circ$ and $\angle D = 90^\circ$.
16. Construct a quadrilateral PQRS in which $PQ = 4$ cm, $QR = 5$ cm, $\angle P = 50^\circ$, $\angle Q = 110^\circ$ and $\angle R = 70^\circ$.
17. Construct a parallelogram KLMN in which $KL = 5$ cm, $LM = 4$ cm and $\angle L = 60^\circ$.
18. Construct a square PQRS, given that diagonal $QS = 6.6$ cm.
19. Construct a rectangle CARE in which $CA = 5.5$ cm and $AR = 5$ m.
20. Construct a square of side 5 cm.

INTERNATIONAL INDIAN SCHOOL, DAMMAM
MATHS WORKSHEET 2018 – 19
CLASS VIII – DIRECT AND INVERSE PROPORTIONS

1. The cost of 15 note books is ₹ 330. i) find the cost of 45 such note books. ii) how many such note book can be bought for ₹ 374? (Ans:- ₹ 990, 17)
2. If a and b are inversely proportional, a = 9 when b = 8, find b when a = 12.
3. In a map, a scale of 1cm represents 75 km. What would be the distance on a map if two towns are 400 km away?
4. A train going at speed of 80 km/h requires 6 hours to reach Kolkota from Patna. How much time would it require if its speed is 48 km/h? (10 h)
5. If 4 soap cakes cost ₹ 50. Find the cost of i) 3dozen soap cakes ii) 20 soap cakes (₹ 450, ₹ 250)
6. If 36 men can complete a work in 24 days, how many extra men be employed so as to complete the work in 18 days (12)
7. A car travels 45 km in 3 litres of petrol i) How far could it travel in 10 litres of petrol? ii) How many litres of petrol are required to cover a distance of 105 km. (150 km, 7 litres)

8. If x varies directly as y in each of the following, complete the table.

x	20	25	?	50	?	100	?
y	?	35	42	?	63	?	105

9. A clerical job is expected to take 10 days to complete, if 4 typists are employed. How long would it take to complete if 6 more typist are employed (4 days)
10. A contractor under took the construction of 9 km road in one month. He has 42 men who can complete the construction of 1 km of road in one month. How many more men should he employed (336)
11. Fill in the blanks if x and y vary inversely

x	4	-	2	2.5	-	8/5	-
y	-	5	20	-	24	-	50

12. An automatic machine in factory fills 1000 milk bottles in 3 hours. How many such bottles can be filled in 19 hours 30 minutes by the machine. (6500)
 13. If a dozen of bananas cost ₹ 36, find the cost of 15 bananas. How many bananas can you get for ₹ 48.
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INTERNATIONAL INDIAN SCHOOL, DAMMAM
MATHS WORKSHEET 2018 – 19
CLASS VIII – VISUALISING SOLID SHAPES

FACTS TO REMEMBER

- A **solid** is a three – dimensional figure which has three dimensions like length, breadth and height. It occupies space. Eg:- cuboid, cube, pyramid, prism etc....
- A solid shape bounded by polygons is called a **polyhedron**.
- A **prism** is a solid where side faces are rectangular and where ends are identical polygons in parallel plains.
- A **pyramid** is a polyhedron whose base is a polygon of any number of sides and whose other faces are triangles with common vertex.
- A pyramid with a triangular base is called a **tetrahedron**. It has ~~4~~ faces, 6 edges and 4 vertices.
- **Euler's formula**:- If F, E and V represent number of faces, number of edges and number of vertices respectively of a polyhedron, then $F+V-E=2$

SOLIDS	F	V	E
Cuboid	6	8	12
Cube	6	8	12
Triangular Prism	5	6	9
Tetrahedron	4	4	6
Pentagonal Pyramid	6	6	10
Pentagonal Prism	7	10	15
Hexagonal Pyramid	7	7	12
Hexagonal Prism	8	12	18
Square Pyramid	5	5	8

1. A polyhedron has 8 faces and 12 edges. How many vertices does this polyhedron have?
2. Can a polyhedron have 20 faces, 10 edges and 8 vertices?
3. What is the least number of faces that can enclose a solid? What is the name of the solid so formed?
4. A 3-D figure, which does not have any edge or vertex is a _____?
5. Using Euler's formula find the unknown numbers.

Faces	?	5	6	8	?
Vertices	12	?	?	6	6
Edges	30	8	12	?	9

6. Is a cuboid same as a square prism?
- _____

INTERNATIONAL INDIAN SCHOOL, DAMMAM
MATHS WORKSHEET 2018 – 19
CLASS VIII – COMPARING QUANTITIES

1. Express as fraction:- i) 46% ii) 80% iii) $66\frac{2}{3}\%$
2. Express as percentage:- i) $\frac{3}{5}$ ii) $\frac{9}{10}$ iii) $\frac{1}{4}$
3. The population of a town increases from 1,60,000 to 1,80,000 in a year. Find the percentage increase in the population of the town. (Ans: $12\frac{1}{2}\%$)
4. A ceiling fan was purchased for ₹ 650 and ₹ 250 were spent on its repair. Find the selling price if it was sold at a profit of 10% (₹ 990)
5. Ravi bought two wooden almirahs from a wholeseller for ₹ 11500 each. He spent ₹ 250 on each of them for polishing. He sold one of them at a gain of 10% and the other at a loss of 2%. Find his overall gain or loss% (4% gain)

6. A man left 32% of his property to his wife, 30% to his elder son, 28% to his younger son and the rest to his daughter. If the daughter's share is ₹ 75000, find (i) the value of the man's property (ii) the wife's share (iii) the total share of two sons (₹ 750000, ₹ 2, 40,000, ₹ 435000)
7. A mobile phone is sold for ₹ 5500 after a discount of 12%. What is the marked price?
(₹ 6250)
8. A refrigerator with marked price ₹ 12500 is available at a discount of 10%. What is the amount of discount and the sale price? (₹ 1250 SP = ₹ 11250)
9. A shopkeeper bought 250 tube lights from a whole seller at ₹ .30 each..However , 15 of them were defective and were not sold .What should be the selling price of each of the remaining tube lights so that he gains 10% on the whole ? (₹ 35.11)
10. An article costs ₹ 21280 including VAT at the rate of 12%. Find the price of the article before VAT was added. (₹ 19000)
11. The price of a computer is ₹ 18000. ST is charged on it at the rate of 12% . Find the amount which the customer pays..(₹ 20,160)
12. Rakesh bought a car for ₹ 450000. Its value is depreciating at the rate of 10% p.a . If he wishes to sell the car after 3 years, how much would it fetch? (₹ 3,28,050)
13. Find the cost price (i) SP = ₹ .500, Gain = 5 % , (ii) SP = ₹ .450 , loss = 10%
14. Banu purchased scientific equipment for ₹ 6000.If its cost depreciates to ₹ 5415 in 2 years. Find the rate of depreciation. (5%)

15.. Find the compound interest when a sum of ₹ 12000 is invested for $1\frac{1}{2}$ years at $6\frac{1}{2}\%$ p.a. compounded annually. (₹ 1195.35)

16. An electrician sold two irons at ₹ 860 each. On one he gain 20% and on other he loss 20% .How much does he gain or lose in the whole transaction ? (Loss = ₹ 71.70)

17.Kamlesh borrowed ₹ 24000 from a bank to buy a scooter at the rate of 15% per annum compounded yearly. What amount will she pay at the end of 2 years 4 months to settle the loan? (₹ 33,327)

18. Find the amount on ₹ 16000 for $1\frac{1}{2}$ years at 10% p.a when the interest is compounded half yearly (₹ 18552)

19.During sale ,the price of washing machine is reduced from ₹ 14500to ₹ 12325. Find the rateof discount offered.(15%)

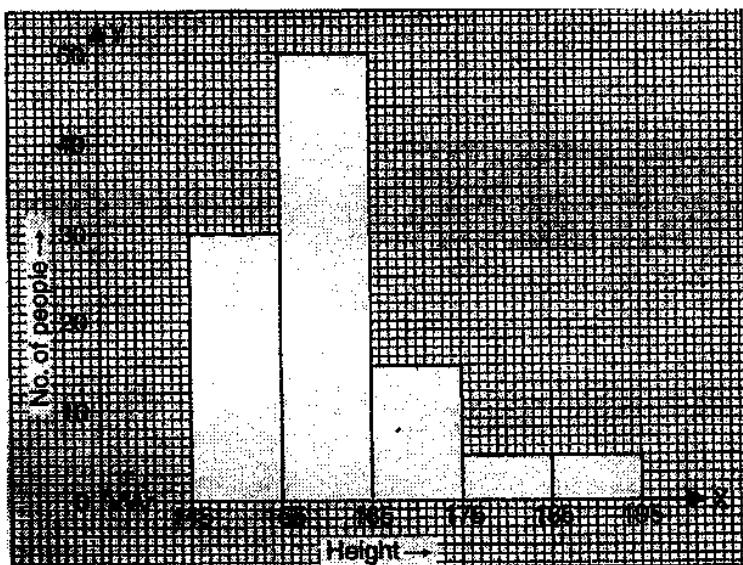
20.Find the difference between compound interest and simple interest on ₹ 12000 at 15% p.a for 3 years ..(₹ 850.50)

INTERNATIONAL INDIAN SCHOOL,DAMMAM

MATH WORKSHEET 2018-19

CLASS VIII DATA HANDLING

- 1.The number of times a particular observation occurs is called is called its _____.
- 2.The collection of facts which are expressed numerically is called _____.
3. The information which we get through surveys or in a routine matter is called _____.
- 4.The difference between the highest and lowest values of a set of data is called _____.
- 5.A _____ is the way of representing data using pictures or symbols.
- 6.The upper limit of class interval 60-70 is _____.
- 7.Width or size of class 200-225 is _____.
- 8.Find the probability of getting an even number when a die is thrown.
- 9.One card is drawn from a well shuffled deck of 52 cards.Find the probability of getting
(i) a face card (ii) the jack of heart (iii) a spade (iv) the queen of diamond
- 10.Heights (in cm)of 30cm girls in a class are given below:
140,160,139,153,153,146,150,148,150,148,152,146,154,150,
150,160,150,148,153,138,152,150,148,138,152,140,146,148,138,146.
Make a frequency distribution table.
- 11 The adjoining histogram depicts the height of 100 people .



- (i) What is the class interval of the maximum height?
- (ii) What is class size?
- (iii) Which two class intervals have the same height ?
- (iv) How many people have height less than 175cm?

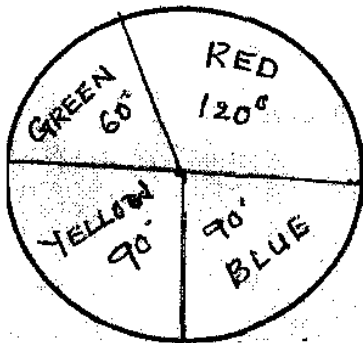
12. Draw a histogram for the following grouped frequency distribution table:

Mark	0- 10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No of students	4	10	16	22	20	18	8	2

13. Draw a pie chart for the following data:

Language	English	Hindi	Telugu	Tamil
No of students	60	80	60	40

14. The given pie chart shows the favourite colours of 720 children. Answer the following questions:

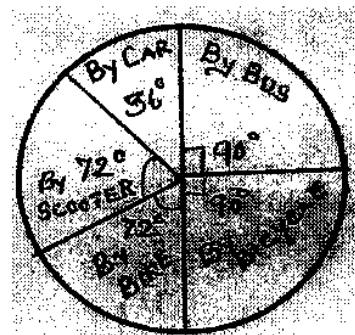


- (i) How many children like green?
- (ii) Find the colour liked by least number of children?
- (iii) How many children like blue?

15. The given pie - chart depicts different types of conveyance using for coming to the school.

Read the pie chart and answer the following questions .

- (i) If 420 children use bikes ,how many children are there in the school ?
- (ii) How many children come to the school by car ?
- (iii) How many children come to the school by scooter ?



16. A bag contains 3 red balls, 5 black balls and 4 white balls. A ball is drawn at random from the bag .What is the probability that the ball drawn is (i) white (ii) red (iii) black (iv) green ?

17. A letter from the word MATHEMATICS is chosen at random .What is the probability that it is T ?

INTERNATIONAL INDIAN SCHOOL- DAMMAM
MATHEMATICS WORKSHEET (2018-19)

CLASS: VIII RATIONAL NUMBERS

1. Write five rational numbers greater than -4

2. Write the additive inverse of the following

(i) $\frac{5}{9}$ (ii) $\frac{-6}{-7}$ (iii) $\frac{-15}{8}$

3. Find the multiplicative inverse of (i) $-1\frac{1}{8}$ (ii) $\frac{-3}{-5}$ (iii) $\frac{-17}{12}$ (iv) -1

4. Name the property used

(i) $\frac{2}{3} \times 1 = 1 \times \frac{2}{3} = \frac{2}{3}$ (ii) $\frac{-1}{5} + 0 = 0 + \frac{-1}{5} = \frac{-1}{5}$

(iii) $\frac{9}{8} \times \frac{8}{9} = 1$ (iv) $\frac{6}{13} \times \frac{4}{11} = \frac{4}{11} \times \frac{6}{13}$

(iv) $\frac{1}{3} \times (\frac{4}{6} \times \frac{7}{2}) = (\frac{1}{3} \times \frac{4}{6}) \times (\frac{7}{2})$

5. Find 5 rational numbers between

(i) $\frac{-5}{6}$ and $\frac{-7}{8}$ (ii) $\frac{-3}{4}$ and $\frac{5}{6}$ (iii) -1 and 2 (iv) $\frac{1}{3}$ and $\frac{1}{2}$

6. Represent the following rational numbers on a number line

(i) $\frac{-5}{12}, \frac{-7}{12}, \frac{-9}{12}$ (ii) $\frac{4}{10}, \frac{6}{10}, \frac{8}{10}$

7. Let a, b, c be the three rational numbers where $a = \frac{2}{3}, b = \frac{4}{5}, c = \frac{-5}{6}$. Verify

(i) $a + (b + c) = (a + b) + c$ (ii) $a \times (b + c) = (a \times b) + (a \times c)$

8. Using appropriate properties find

(i) $\frac{2}{3} \times \frac{-5}{7} + \frac{7}{3} + \frac{2}{3} \times \frac{-2}{7}$ (ii) $\frac{1}{7} \times \frac{-3}{5} - \frac{1}{10} - \frac{3}{5} \times \frac{3}{7}$

(iii) $\frac{7}{3} \times \frac{1}{8} + \frac{1}{12} + \frac{7}{3} \times \frac{1}{4}$ (iv) $\frac{2}{5} \times \frac{4}{7} + \frac{2}{5} \times \frac{-1}{10}$

9. Find the sum of additive inverse and multiplicative inverse of -7.
10. Find the product of additive inverse and multiplicative inverse of $\frac{1}{3}$
11. Multiply $\frac{9}{13}$ by the reciprocal of $\frac{-2}{39}$
12. Using suitable rearrangement and find the sum

(i) $\frac{5}{7} + \left(\frac{-9}{4}\right) + \frac{3}{7} + \frac{-13}{4}$

(ii) $\frac{4}{7} + \left(\frac{-8}{9}\right) + \left(\frac{-5}{21}\right) + \frac{1}{3}$

(iii) $\frac{-8}{3} + \frac{-1}{4} + \frac{-11}{6} + \frac{3}{8}$